

REMARKS/ARGUMENTS

The Examiner has rejected claims 1, 3, 8, 10, 11 and 14-16 under 35 U.S.C. § 102(b) as anticipated by Hisajima et al. (U.S. Patent No. 5,577,555). In making the rejection, the Examiner relies on Figure 25 of the '555 patent and asserts that the dents or dimples 20 (reference numeral 20 does not appear in Figure 25 but does appear in Figures 1, 2 and 3 and the patentee refers to the dents 20 "as shown in Figures 25-32" in column 5, lines 14 and 15) constitute grooves having uniform substantially semicircular cross sections that extend continuously about a circumference of the liner.

It is respectfully submitted that the Examiner is either not carefully reading (or perhaps not giving weight to) the limitations in the independent claims, or does not understand the nature of the geometries at issue here. The dents 20 referred to by the Examiner are in fact discrete dents or dimples in the surface of tube 21, each separated from an adjacent dent, with each dent defined by a circular or oval peripheral surface. By their very nature, each dent or dimple does not have a uniform cross sectional shape in that each instantaneous section or slice through the dent or dimple will show a cross section of having a different dimension than the slice or section immediately adjacent thereto. Furthermore, an array of discrete (separated) dents or dimples cannot, by definition, constitute an annular groove having a uniform, substantially semi-circular cross-section that extends continuously about a circumference of the liner.

In this regard, the Examiner is invited to compare Figures 1, 2, 5, 6-24 of Hisajima with Figure 4 of this application. It is readily apparent that the rings of discrete dents or dimples do not, by definition, anticipate the subject matter of either of claims 1 or 10.

Note that the patent applicant is not using specialized or otherwise uncommon definitions for the terminology used in the claims. To the contrary, the language calling for “axially spaced annular grooves formed in an outside surface of said combustor liner, each groove having a uniform, substantially semicircular cross section and extending continuously about a circumference of said liner” is intended to be interpreted in accordance with the ordinary meaning of those words as they would be understood by any one of ordinary skill in the art. As such, the multiple rows and columns of discrete dimples or dents as described in Hisajima cannot be said to anticipate the subject matter of independent claims 1 and 10.

With regard to claim 16, similar continuous grooves are claimed but are required to be angled relative to a flow direction, with a first plurality of grooves criss-crossed with a second plurality of grooves. The Examiner's contention that Figure 3 of Hisajima discloses the claimed arrangement is plainly wrong, and no arbitrary drawing of lines in criss-crossed fashion across a plurality of discrete dimples or dents will change the explicit disclosure in the reference.

In addition, the Examiner makes a special note that the introductory phrase of the claim, “for a combustor liner” recites only intended use. In fact, independent claims 1, 10 and 16 each call for “a combustor liner for a gas turbine.” The heat exchanger tube of Hisajima is not a combustor liner for any machine and on this ground as well, the reference is clearly deficient as an anticipatory reference.

Dependent claims 3, 8, 11, 14 and 15 further define the grooves and are therefore also not anticipated by Hisajima.

The Examiner has also rejected claims 1, 3, 8-11 and 14-16 under 35 U.S.C. § 103 as unpatentable over Glezer in view of Hisajima. The Examiner here again misinterprets and/or misunderstands the disclosure in Glezer in that the cavities 84 are asserted to be grooves but, for


the same reasons presented above, clearly they are not. Curiously, the Examiner acknowledges that Glezer does not teach that grooves 84 extend continuously about a circumference of a liner, but relies upon Hisajima's "annular grooves 20" as teaching one of ordinary skill in the art to modify Glezer to provide a combustor liner with a continuous grooves about the circumference of the liner. It is not at all clear how the Examiner distinguishes the dents or cavities 84 of Glezer from the dents 20 of Hisajima other than that in a circumferential direction, the rows of dents in Glezer are staggered as opposed to parallel. Nevertheless, neither reference discloses or even remotely suggests a plurality of axially spaced annular grooves having a uniform substantially semicircular cross sections extending continuously about a circumference of the liner, either in parallel or in criss-crossed fashion as required by the independent claims of the application. Accordingly, no combination of Glezer with Hisajima is sufficient to establish obviousness with respect to any of claims 1, 3, 8-11 and 14-16.

The application, including claims 1, 3, 8-11 and 14-16, is now in condition for immediate allowance and early passage to issue is requested. In the event any small matters remain outstanding, the Examiner is requested to telephone the undersigned so that the prosecution of this case can be expeditiously concluded.

Respectfully submitted,

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